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(54) Detergent composition.

(57) A shampoo composition consists of a first, translucent gel body containing a detergent, and a second contiguous, opaque gel body containing the anti-dandruff agent zinc pyrithione. The composition is extrudable from a collapsible tube and presents a striped appearance on extrusion.

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### DETERGENT COMPOSITION

The present invention relates to a detergent composition, and particularly to a shampoo composition containing an antidandruff agent.

Antidandruff agents, such as zinc pyridine thione (zinc omadine; zinc 2-pyridine thiol-N-oxide, hereinafter referred to as ZPT) are frequently included in shampoo compositions for combatting dandruff. Many materials suitable for this type of use tend to be insoluble in aqueous solution, and hence detergent compositions containing such agents have an opaque or cloudy appearance. Transparent or translucent detergent compositions are visually attractive but are rendered opaque by the addition of these agents.

By means of the present invention, it is possible to combine the visual attractiveness of a transparent or translucent detergent composition with the advantages of an antidandruff agent.

According to the present invention, there is provided a detergent composition comprising a first transparent or translucent gel body containing a detergent, and a second substantially opaque gel body,

02 contiguous with the first gel body, containing an anti-  
03 dandruff agent. The composition is suitably contained  
04 in a tube or other container which is preferably  
05 collapsible, so that when the composition is discharged  
06 from the container the two gel bodies remain in contact  
07 with each other and form a self supporting gel  
08 structure.

09  
10 The consistencies of the two gel bodies should be  
11 sufficiently firm to hold the bodies together in  
12 position, and yet be easily extrudable through, for  
13 example, the nozzle of a tube. Preferably, the two gel  
14 bodies have substantially identical rheological  
15 properties.

16  
17 The preferred antidandruff agent is ZPT, and this  
18 is suitably present in the composition in an amount of  
19 0.1 to 2.5% by weight of the total composition. The  
20 weight ratios of the two bodies can vary within wide  
21 limits. For example, the weight ratio of the first gel  
22 body to the second gel body may be from about 1:9 to  
23 9:1. A particularly suitable ratio is 1:1. The  
24 distribution of the two gel bodies can also vary widely  
25 in order to give different visual patterns. For  
26 example, one gel body may be completely contained  
27 within the other gel body, or one gel may be partly  
28 contained in the other gel body to form a stripe or  
29 stripes.

30  
31 The desired rheological properties of the two gel  
32 bodies may be achieved by incorporating suitable  
33 thickening materials into the bodies. For example, the  
34 bodies may be thickened with a gum or thickening agent  
35 of either natural, or synthetic origin. Suitable  
36 thickening agents are, for example, proteins, silicas,  
37 alginates, sodium magnesium silicates, acrylic acid  
38 co-polymers, maleic anhydride co-polymers and cellulose  
39 ethers and esters.

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It has been found desirable to use as a thickening agent a material which has secondary detergent and/or foam stabilising properties. One or more such foam stabiliser/thickener materials may be present in each gel body, and preferred materials are lauric isopropanolamide or coconut monoethanolamide. The amount of such a foam stabiliser/thickener is preferably from 0.5 to 7.0% by weight of the total composition.

Preferably each gel body contains one or more agents designed to improve the cosmetic condition of the hair after shampooing, by enhancing feel and gloss and reducing electrostatic flyaway. Such agents may comprise wholly or in part the detergent materials described above as providing a foam stabilising or thickening effect, or may comprise other agents with surface active properties, or certain polymeric materials. Suitable surface active materials are certain salts of ethoxylated fatty alcohol phosphate esters, particularly an oleyl alcohol derived material marketed under the trade name Briphos O3D. Suitable polymeric materials are cationic cellulosic resins marketed under the trade name Polymer JR 125,400 or 30M or quaternary of a vinyl pyrrolidone copolymer marketed under the trade name Gafquat 755N. A particularly effective material is a cationic guar gum sold under the trade name Jaguar C-13-S by Meyhall Chemicals Ltd. This may be present in either or both gel bodies in an amount from 0.1 to 5.0% by weight of the total composition.

The compositions according to the invention may include any conventional detergent well known in the art. For shampoo compositions, it is usual to use an anionic detergent, for example alkali metal, ammonium or hydroxyalkylamine salts of alkyl sulphates or alkyl ether sulphates, alkyl benzene sulphonates, alkyl



02 sulphones,  $\alpha$ -alkenyl sulphonates, polyoxyethylenealkyl  
03 sulphonates and polyoxyethylenealkylphenylsulphates.  
04 However, non- ionic and amphoteric detergents may also  
05 be used. A preferred detergent comprises sodium lauryl  
06 ether sulphate. A shampoo composition preferably  
07 contains from 5 to 25% w/w of detergent (based upon  
08 100% active material).

09

10 The compositions of the invention may also contain  
11 various conventional accessory ingredients such as  
12 perfumes, colouring materials and preservatives.

13

14 Both gel bodies may be coloured, if desired,  
15 provided the first gel body remains transparent or  
16 translucent.

17

18 The compositions of the invention may be made by  
19 charging a suitable container with the two gel bodies,  
20 using the method and apparatus described in British  
21 Patent Specification No. 962,757.

22

23 The present invention will now be illustrated by  
24 the following Examples.

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Example 1

Ingredients	% w/w	
	First gel body	Second gel body
SLES (28%)	70.0	67.20
Lauric isopropanolamide	3.0	2.88
Coconut monoethanolamide	3.0	2.88
Cationic guar gum	0.5	0.48
Zinc pyrithione	-	2.0
Perfume, dyes, preservatives, etc	q.s.	q.s.
Water to	100.0%	100.0%

SLES (28%) refers to a 28% w/v aqueous solution of sodium lauryl ether sulphate.

The weight ratio of the two gel bodies is 1:1.

Example 2

Ingredients	% w/w	
	First gel body	Second gel body
SLES (28%)	65.0	65.0
Lauric isopropanolamide	2.88	2.88
Coconut monoethanolamide	2.88	2.88
Cationic guar gum	0.3	0.30
Zinc pyrithione	-	4.0
Perfume, dyes, preservatives, etc	q.s.	q.s.
Water to	100.0%	100.0%

The weight ratio of the first gel body to the second gel body is 3:1.

Example 3

Ingredients	% w/w	
	First gel body	Second gel body
SLES (28%)	75.0	73.0
Lauric isopropanolamide	2.75	2.68
Coconut monoethanolamide	2.75	2.68
Cationic guar gum	0.7	0.62
Zinc pyrithione	-	1.33
Perfume, dyes, preservatives, etc	q.s.	q.s.
Water to	100.0%	100.0%

The weight ratio of the first gel body to the second gel body is 1:3.

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Example 4

Ingredients	% w/w	
	First gel body	Second gel body
SLES (28%)	70.0	67.2
Ethoxylated fatty alcohol	3.0	2.88
Sodium salt of an ethoxylated oleyl phosphate ester	3.0	2.88
Zinc pyrithione	-	2.0
Perfume, dyes, preservatives, etc	q.s.	q.s.
Water to	100.0%	100.0%

The weight ratio of the first gel body to the second gel body is 1:1.

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Example 5

Ingredients	% w/w	
	First gel body	Second gel body
Triethanolamine lauryl sulphate	70.0	67.20
Linoleic diethanolamide	6.0	5.76
Quaternary derivative of a vinyl pyrrolidone copolymer	0.25	0.24
Zinc pyrithione	-	2.00
Perfume, dyes, preservatives, etc	q.s.	q.s.
Water to	100.0%	100.0%

The weight ratio of the first gel body to the second gel body is 1:1.

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CLAIMS

1. A detergent composition comprising a first transparent or translucent gel body containing a detergent, and a second substantially opaque gel body, contiguous with the first gel body, containing an anti-dandruff agent.
2. A composition according to claim 1, in which the two gel bodies have substantially identical rheological properties.
3. A composition according to claim 1 or claim 2, in which the anti-dandruff agent comprises zinc pyridine thione.
4. A composition according to any one of claims 1 to 3, in which the weight ratio of the first gel body to the second gel body is from 1:9 to 9:1.
5. A composition according to any one of claims 1 to 4, in which one gel body is partly contained within the other gel body to form a stripe or stripes.
6. A container, containing a composition according to any one of claims 1 to 5, which includes a nozzle through which the composition may be extruded.
7. A container according to claim 6, in the form of a collapsible tube.